

IN THE CLAIMS

Please amend Claims 1, 13, 14, 15, and 16 as shown in marked-up form as follows:

1. (Currently Amended) A data storage system comprising a set of structures including :

a first structure of layers including at least a first ferromagnetic layer and a second ferromagnetic layer with at least a separation layer of a non-magnetic material therebetween, said first structure having at least a magneto resistance effect ;

a second structure including at least one magnetic layer, said second structure influencing at least one intrinsic magnetic characteristic of said first structure ; and

said second structure being separated from said first structure by at least a layer of a high-resistive metallic material and said layer of a high-resistive metallic material furthermore coupling the influencing of said second structure on said first structure while not substantially influencing the magnitude of the magneto resistance effect of said first structure and is less than 5 nm thick.

2. (Original) The system as recited in claim 1 wherein said second structure comprises at least one layer of a magnetic material of a high coercivity.

3. (Original) The system as recited in claim 1 wherein said second structure comprises at least one layer of an exchange biasing material.

4. (Original) The data storage system as recited in claim 1 wherein said second structure comprises a layer that has a magnetization direction that is substantially anti-parallel with respect to the magnetization direction of said first ferromagnetic layer.

5. (Cancelled)

6. (Original) The system as recited in claim 1 wherein said layer of a high-resistive metallic material furthermore is at least partially inducing a crystallographic characteristic on said second and/or said first structure.

7. (Original) The system as recited in claim 6 wherein said layer of a high-resistive metallic material is one of the group of Ti, Zr, Hf, V, Nb, and Ta, or any combination thereof.

8. (Original) The system as recited in claim 6 wherein said layer of a high-resistive metallic material has a thickness in the range of one atomic layer up to 15 nm.

9. (Original) The system as recited in claim 6 wherein said layer of a high-resistive metallic material is one of the group of Mo, Cr, and W or any combination thereof.

10. (Original) The system as recited in claim 6 wherein said layer of a high-resistive metallic material is a metallic polymer with a conductivity in the range of the conductivities of the group of Ti, Zr, Hf, V, Nb, Ta, Mo, Cr, and W or any combination thereof.

11. (Original) The system as recited in claim 6 wherein said second structure is separated from said first structure by at least said layer of said high-resistive metallic material and an insulating layer abutting said layer of said high-resistive metallic material.

12. (Previously Presented) The system as recited in claim 1 wherein the set of structures is part of a magnetic memory structure.

13. (Currently Amended) A sensing system of a magnetic characteristic, said system comprising :

a first structure of layers including at least a first ferromagnetic layer and a second ferromagnetic layer with at least a separation layer of a non-magnetic material therebetween, said first structure having at least a magneto resistance effect ;

a second structure including at least one magnetic layer, said second structure influencing at least one intrinsic magnetic characteristic of said first structure ; and

said second structure being separated from said first structure by at least a layer of a high-resistive metallic material and said layer of a high-resistive metallic material furthermore coupling the influencing of said second structure on said first structure while not substantially influencing the magnitude of the magneto resistance effect of said first structure and is less than 5 nm thick.

14. (Currently Amended) A method of fabricating a magnetic system, the method comprising the steps of :

defining a first structure of layers including at least a first ferromagnetic layer and a second ferromagnetic layer with at least a separation layer of a non-magnetic material therebetween, said first structure having at least a magneto resistance effect ;

defining a second structure, said second structure including at least one magnetic layer or a set of layers for influencing at least one intrinsic magnetic characteristic of said first structure ; and

defining at least one layer of a high-resistive metallic material that is less than 5 nm thick in-between said second structure and said first structure, and said layer of a high-resistive metallic material furthermore at least partially inducing a crystallographic characteristic on said second structure.

15. (Currently Amended) A method of tuning a magneto resistance characteristic of a magnetic system, the system comprising a set of structures including a first structure of layers including at least a first ferromagnetic layer and a second ferromagnetic layer with at least a separation layer of a non-magnetic material therebetween, said first structure having at least said magneto resistance characteristic, the method comprising the steps of :

defining a layer of a high-resistive metallic material on said first structure ; and

defining a second structure including at least one magnetic layer that is less than 5 nm thick on said layer of said high-resistive metallic material, said second structure said second structure including at least one magnetic layer or a set of layers for influencing at least one intrinsic magnetic characteristic of

said first structure wherein said magneto resistance characteristic can be tuned by adjusting a thickness of the high-resistive metallic material.

16. (Currently Amended) A magnetic system, the system comprising a set of structures including:

a first structure of layers including at least a first ferromagnetic layer structure and a second ferromagnetic layer with at least a separation layer of a non-magnetic material therebetween, said first structure having at least a magneto resistance effect ;

a second structure including at least one magnetic layer, said second structure influencing at least one intrinsic magnetic characteristic of said first structure ;

said second structure being separated from said first structure by at least a layer of a high-resistive metallic material that is less than 5 nm thick and said layer of a high-resistive metallic material furthermore coupling the influencing of said second structure on said first structure while not substantially influencing the magnitude of the magneto resistance effect of said first structure; and wherein

said first ferromagnetic layer structure and said second structure respectively comprising an even or odd number of non-

abutting ferromagnetic layers and an odd or even number of non-abutting ferromagnetic layers.